IN THE CLAIMS:

This version of the claims replaces and supercedes all prior versions of the claims.

1. (Currently Amended) An orthogonal frequency division multiplex modem circuit which uses a plurality of subcarriers for communication, and transmits and receives a plurality of communication channels, each of said plurality of communication channels is capable of transmitting and receiving different types of communications from the other of said plurality of communication channels, where each type of communications has different bit rates, QoS (Quality of Service) and priorities which are caused by said different types of communications, wherein the plurality of subcarriers are divided into groups and each of said groups are assigned one group per each of the plurality of communication channels, respectively.

2. (Currently Amended) The orthogonal frequency division multiplex modem circuit according to claim 1, wherein the assignment of subcarrier groups to the respective communication channels is adaptively performed based upon said priorities, bit rates and QoS (Quality of Service) for each of said plurality of communication channels.

3. (Original) The orthogonal frequency division multiplex modem circuit according to claim 1, wherein a modulation system given to each of the subcarrier groups is changed according to QoS (Quality of Service) needed for a corresponding communication channel.

4. (Original) The orthogonal frequency division multiplex modem circuit according to claim 1, wherein means for randomizing alignment of the respective subcarriers on a frequency axis is

included in a transmitting side, and means for de-randomizing a signal where the alignment is randomized is included in a receiving side.

5. (Original) The orthogonal frequency division multiplex modem circuit according to claim 2, wherein all subcarriers are assigned to a single channel as required, while communication of other channels is stopped.

6. (Original) The orthogonal frequency division multiplex modem circuit according to claim 3, wherein the changeable modulation system uses at least any one of BPSK (Binary Phase Shift Keying), QPSK (Quadrature Phase Shift Keying), and QAM (Quadrature Amplitude Modulation), and a symbol point on a phase plane is changed according to the QoS.

7. (Original) The orthogonal frequency division multiplex modem circuit according to claim 3, wherein peak values of modulation symbols are determined so that transmission power of the respective subcarriers becomes the same irrespective of the modulation systems.

8. (Original) The orthogonal frequency division multiplex modem circuit according to claim 4, wherein the processing for randomizing positions of the respective subcarriers is updated every symbol.

9. (Original) The orthogonal frequency division multiplex modem circuit according to claim 8, wherein means for determining the randomization pattern every symbol and transmitting the randomization pattern every symbol to the receiving side is included in the transmitting side, and means for synchronizing transmission and reception of the randomization pattern is included.

10. (Original) The orthogonal frequency division multiplex modem circuit according to claim 9, wherein a predetermined communication channel and a subcarrier corresponding thereto are assigned as the means for synchronizing transmission and reception of the randomization pattern.

11. (Original) The orthogonal frequency division multiplex modem circuit according to claim 10, wherein the predetermined communication channel and the subcarrier corresponding thereto are excluded from the randomization process.